Decision Report

Application for works approval

Division 3 Part V of the *Environmental Protection Act 1986*

Works approval number	W6593/2021/1
Applicant	Milne AgriGroup Pty Ltd
ACN	008 919 579
DWER file number	DER2021/000454
Premises	Milne Feeds 'Oatway' Development 89 John Street WELSHPOOL WA 6106
Date of report	05/08/2022
Status of report	Final

1. Decision summary

This decision report documents the assessment of potential risks to the environment and public health from emissions and discharges during the construction and operation of a new animal feed mill at Milne Feeds. As a result of this assessment, works approval W6593/2021/1 has been granted.

2. Scope of assessment

2.1 Regulatory framework

In completing the assessment documented in this decision report, the department has considered and given due regard to its regulatory framework and relevant policy documents which are available at https://dwer.wa.gov.au/regulatory-documents.

2.2 Application summary

On 6 August 2021, Milne AgriGroup Pty Ltd (Milne/the applicant) submitted an application for works approval under section 54 of the *Environmental Protection Act 1986* (EP Act) to establish a new feedmill facility within the boundary of their existing licensed feedmill on John Street, Welshpool (premises).

The premises relates to the categories and assessed production capacity under Schedule 1 of the Environmental Protection Regulations 1987 which are defined in works approval W6593/2021/1. The infrastructure and equipment relating to the premises category and any associated activities which the department has considered in line with *Guideline: Risk Assessments* (DWER 2020) are outlined in works approval W6593/2021/1.

Natural gas-fired boilers are proposed to produce steam for use in the feed manufacturing process in the application. The expected boiler natural gas supply rate is 4,800 kg/hour which exceeds the design capacity for category 67: fuel burning; therefore, operation of the boiler has been considered within the scope of the assessment.

2.3 Background and application overview

The applicant currently operates a 150,000 tonne per annum (tpa) feedmill at Lots 8 and 501 John Street, and Lot 601 Welshpool Road (existing feedmill) under licence L7438/2000/9. The feedmill is located within the Welshpool industrial precinct on land zoned General Industry, about 7.5 km south-east of the Perth CBD. It is bordered by Welshpool Road to the north, Leach Highway to the east and John Street to the west. There are two other feedmills operating within proximity to the Milne Feedmill – the Nufeeds Feedmill about 150 m west on Railway Parade and the Weston Animal Nutrition Feedmill about 170 m south west on Sevenoakes Street.

The existing Milne feedmill receives and processes raw materials including grains, straw, oat husk, molasses, and meat meal to produce pelletised animal feed via a process of milling, mixing, grinding and conveying within a dedicated building. A network of external elevators, conveyors and blow lines transfer raw materials and finished feeds to and from silos and storage bins as part of the process.

Due to storage limitations, storage and handling of some raw materials and product occurs outside the main feedmill building. A bulk storage shed is used for storage and load out of some oat husk and product, and a semi open straw processing area is used to receive and store straw bales used in the feed manufacturing process. The licence for the existing feedmill was first granted in 2000, however animal feed manufacturing has been occurring at the location since the early 1900s. While equipment upgrades have occurred over that time, some of the infrastructure, structures and processes do not comply with modern-day standards.

The applicant proposes to construct an additional new feedmill on Lot 501 John Street, about

100 m south east of the existing feedmill. The new feedmill has been designed with sufficient space for establishment of two processing lines. The applicant advises it may choose to build the two processing lines simultaneously or in a staged manner. The new feedmill will receive and handle raw materials including ground and unground oat husk, straw, mash, grains (e.g., wheat, lupins, barley), meals (e.g., soybean, canola) oils and food additives which will be processed into finished feed pellets and then converted into a homogenous pelletised mixture for sale.

The new plant is proposed to operate 24 hours per day, seven days per week and will produce up to 150,000 tpa of animal feed. It has been designed as a fully enclosed manufacturing facility with access via fast activating roller doors to prevent emissions and ingress of contaminants. Animal feed manufacture using the new feedmill will involve the following process (Milne 2022):

- Raw material receival and storage – trucks will deliver bulk solid raw materials such as oat husk and grain to an enclosed intake building where they are unloaded to an in-ground intake pit. The materials are elevated and conveyed from the inlet pit into dedicated storage silos. Bulk liquid raw materials will also be delivered by truck and decanted directly into storge vessels. Packaged micro and macro ingredients will be delivered via truck and stored within the main feedmill building.
- Hammer milling – raw materials requiring milling (such as oat husk, grain and straw) will be conveyed from the storage silos to a 450 kW Andritz hammer mill in a separate building where they are milled, before being returned to silos ready for processing.
- Batching and mixing – batching, mixing, cooling, pre-conditioning, pelleting and coating will occur in an enclosed feedmill building. Raw materials will be transferred via enclosed conveyors and elevators from silos into dedicated weigh hopper batching bins. After weighing and batching, ingredients are transferred via enclosed conveyor and elevator into a mixing unit to create a mash for pelleting. Liquid ingredients are transferred via hard piping and added to the mixing unit as required.
- Pre-conditioning – steam from a 1,500kW boiler will then be added and blended into the mash in a press conditioner.
- Pelleting – the blended mash will be fed through a 35 t/hr Andritz Pellet Press to convert the mash into pellets. The pellets are then fed through a Geelan Cooler followed by a pellet sieve to remove fines and oversize particles which are recycled back into the process. Pellets are mixed through oils delivered from the liquid storage in a Coating system and transferred to external silos for storage prior to loadout.
- Product dispatch/loadout – Product loadout will occur within an enclosed dedicated loadout building. Trucks enter the building via fast activated roller and a telescopic conveyor with a dust suppressor discharges the finished product into the truck directly from the storage silos. The building will also include a weighbridge.

Access to the new feedmill will be via an existing laneway that joins onto John Street. The applicant currently proposes to operate the existing feedmill and the new feedmill concurrently.

2.4 Compliance and complaints history

The department's published *Guideline: Risk Assessments* (DWER 2020) states that operator history is a relevant consideration in establishing risk context and in determining risk likelihood criteria.

Given the applicant operates an existing feedmill adjacent to the proposed feedmill, and the two premises are proposed to operate concurrently, the delegated officer considered it relevant to take into account the applicant's operational history relating to the existing feedmill. Complaints received in relation to the applicant's activities at the existing feedmill have been considered, as well as information from inspections of the existing feedmill and the content of annual audit compliance reports (AACR) and annual environmental reports.

Key matters identified through reviewing this information are outlined below.

- Historical dust complaints relating to the existing feedmill are summarised in Table 1. Complainants frequently referred to the dust resembling that from grain, hay and chaff and being yellow in colour. Complaints were highest in 2007. The complaint records indicate the related dust events were primarily associated with dust emissions resulting from cyclone malfunctions, poor housekeeping and loading activities occurring in open areas. Modifications were made to the cyclones to detect and alert operators in event of high dust readings in the cyclone. Over the period 2004-2020 three environmental field notices were also issued to Milne to rectify issues on the premises. The department did not receive any complaints relating to the existing feedmill operation between 2014 and 2020.

Table 1: Historical dust complaints related to Milne Feedmill 2004-2013

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014-2020	2021	2022
Number of dust related complaints	1	5	2	8	1	1	1	1	2	1	0	11	4*

- The department received 11 complaints from surrounding businesses throughout 2021 and continuing into 2022 (4 at the time of writing). Complainants provided photographic and video evidence of dust impacts on their properties. Impacts reported included dust frequently covering cars and carparks, dust entering buildings through air-conditioning units resulting in the need for additional cleaning, inability to keep windows and doors open due to dust ingress and amenity and health impacts occurring to workers because of the dust.
- The department received correspondence in November 2021 and February 2022 from the City of Canning advising it is receiving ongoing complaints from local businesses alleging dust is regularly emitted from the existing feedmill. The city visited nearby businesses and confirmed the dust impacting them appears to be a grain/feed product in nature and is in a quantity that is enough to warrant investigation. The city requested the department investigate the dust complaints and review the dust mitigation methods and licence conditions for the existing feedmill.
- The department undertook a licence compliance inspection of the existing feedmill in April 2021 in response to the increase in complaints and identified several non-compliances relating to the prevention and control of dust emissions from the premises, as well as some administrative conditions. Observations made during the inspection included:
    - housekeeping was not being appropriately maintained on the premises with dust and product buildup observed in a number of areas;
    - a number of loading and unloading areas were not all fitted with appropriate doors or screens;
    - straw storage and handling activities were contributing to material accumulation on the premises; and
    - material stored and handled in open bunkers and skip bins has the potential to for dust lift off.
- The department requested the licence holder undertake several actions to address the non-compliances identified, including development of a dust management plan, installation of doors or screens at loading/unloading areas, implementation of routine maintenance and housekeeping practices to remove and prevent accumulation of dust, confirm the maintenance schedule for dust collection equipment and maintain and provide a copy of the premises complaint register.

Milne submitted a Dust Management Plan and details of actions undertaken and further actions planned to address the department's requests in September and November 2021. Further actions have been undertaken since this time which were detailed in the document *Milne Feeds New Mill Overview and Dust Management Improvements* (Milne Feeds 2022), submitted in support of the application. A summary of actions undertaken is included in the following section.

- In January 2022 the department advised the applicant that despite actions having been undertaken to address dust emissions, dust complaints continued to be received relating to the existing feedmill, and several submissions relating to ongoing dust emissions had been received in response to advertisement of the application, indicating actions undertaken to mitigate dust emissions appear to be inadequate.

  Establishment of an additional adjacent animal feed manufacturing facility, with an equivalent capacity to the existing facility, would potentially exacerbate dust impacts unless effective dust controls are implemented at the existing feedmill. The department requested further information on actions taken or planned to mitigate dust emissions to an acceptable level to be considered in the assessment of the application. In response, Milne submitted a document titled *Milne Feeds New Mill Overview and Dust Management Improvements* to support the application.

  The document identifies the highest risk dust sources associated with the existing and proposed feedmills (storage and handling of bulk materials, in particular oat husk and straw), and controls which have been implemented or will be implemented to mitigate dust emissions. A summary of the content relating to the existing feedmill is below:

  - Receival of dry bulk raw materials is one of the highest dust risk activities. Materials are unloaded into one of three dump sinks, none of which are completely enclosed. Curtains/curtain flaps have been installed as wind breaks across dump sink openings to reduce wind throughflow and dust egress, blower vacuums have been purchased to blow dust into the sink following delivery, and a Burnley Baffles dust suppression system has been installed at the drive through dump sink.
  - Historically, due to limited silo storage capacity, some oat husk has been stored in outdoor storage bays. This practice results in an additional fugitive and handling dust source. Oat husk presents a higher dusk risk than other raw materials as it is a light and fluffy material. This practice has now been banned and the outdoor storage bays are limited to use for packaged materials which are not dust generating and product. Oat husk is stored and loaded in the bulk storage shed if required. The new feedmill will receive the vast majority of oat husk as its enclosed design is better suited to handling of this material. The outdoor storage bays will be removed to make way for the new feedmill and it will have significantly more storage silos eliminating the need for storage outside of enclosed environments. Milne are also investigating recommissioning of four decommissioned silos to further increase the premises storage capacity.
  - Product load out into trucks is a high-risk activity for dust generation. Sheeting has been installed around the loadout chutes to protect the loading point from wind during loadout. Product loadout also occur in the bulk shed with a loader which presents a risk of dust emissions. Operational controls have now been established to reduce the potential for dust emissions during this loading process. The storage shed doors are required to be closed during loading and prevailing winds monitored so loading can be undertaken when they are less likely to transfer dust to the neighbouring businesses. The additional storage capacity of the new feedmill is expected to reduce the need for product to be stored in the bulk shed prior to loadout as well.
  - Storage and handling of straw bales presents a high dust emission risk. Historically bales were unloaded in an open area and stored in a semi-open hanger. A wall of

straw bales had been established around the hanger as a wind break to mitigate dust emissions however presented a dust source in itself. The straw wall has now been removed and unloading and handling of the bales is confined to the semi-open hanger to reduce exposure and dust generation. Additionally, a screen has been added to the open side of the Fibre processing building (where straw bales are ground) to reduce wind exposure. Milne is also investigating options for a wind fence.

  - To minimise dust accumulation on the premise Milne has purchased a commercial street sweeper which is operated twice a day and on an adhoc basis in response to any spills to prevent accumulation and spread of dust on the premises. This activity was previously undertaken by a contract company approximately three days per week.
  - Milne undertook a maintenance review and optimisation of the existing dust filter systems in late 2021 to improve effectiveness. Works undertaken on the system included replacing sections of ducting where leaks were detected, refurbishment of the main dust filter unit which included replacement of all bags, replacing and resealing venturis, installation of new, sealed explosion vents, overhauling the pulsing valve system and rotary seals, reviewing and refining dust filter alarm and mill shutdown settings, and installation of control monitoring of dump sink 1's dust filter system. Milne intends to continue review and upgrade works of the dust filter system through 2022.

- In April 2022 the department undertook a follow-up inspection of the existing feedmill to observe the actions undertaken to address the non-compliances with L7438/2009/9 identified in April 2021 relating to the prevention and control of dust emissions. The improvements detailed above were observed and well as improved housekeeping. The department's investigation and actions relating to the non-compliances was ongoing at the time of this assessment and is being managed separately to the application assessment and decision making.
- The premises production capacity of 150,000 tpa for the existing feedmill was exceeded in the 2018/19 (169,075 tonnes) and 2019/20 (160,233 tonnes) annual reporting periods. Milne advised production needed to be increased during these periods to meet increased demand which resulted from drought and bushfires impacting farming regions in parts of Australia during these periods.

2.5 Air quality and odour impact assessment

The applicant commissioned Environmental & Air Quality Consulting Pty Ltd (EAQ) to undertake an air emissions impact assessment to determine the potential impact on air quality and amenity for nearby receptors of as a result of dust and odour emissions from the proposed feedmill (EAQ 2021).

2.5.1 Air quality assessment

Dispersion modelling was undertaken using the AERMOD dispersion model to predict ground level concentrations (GLCs) of particulate matter smaller than 10 and 2.5 microns (µm) (PM_{10} and $PM_{2.5}$) at receptors in proximity to the premises. Model scenarios comprised:

- the new feedmill operating at 150,000 tpa;
- the existing feedmill operating at 150,000 tpa; and
- both feedmills operating simultaneously (cumulative assessment).

Only point emission sources were included in the model. The emission sources for the new feedmill included the transfer system dust filters (15), the cooler cyclone stacks (2), the intake building dust filter system (1) and hammer mill dust filter (1). Emission sources for the existing feedmill included the transfer system dust filters (14) and pellet press cyclone exhausts (3). Emission rates adopted for the modelling were based on the design criteria for the dust

filtration systems adopted at the existing feedmill and proposed for the new feedmill. Emission sources were assumed to operate continuously (24 hours per day, 365 days per year) for comparison with 24-hour and annual dust criteria.

Model predictions were compared with PM_{10} and $PM_{2.5}$ ambient air quality guideline values (AGVs) taken from the National Environment Protection Council (NEPC), *National Environment Protection (Ambient Air Quality) Measure 2021* (Ambient Air NEPM) (Table 2). The modelling predicted that in isolation, the new feedmill would contribute less than 14% of the $PM_{2.5}$ AGVs, and less than 42% of the PM_{10} AGVs at industrial receptors during worst case meteorological conditions. The modelling also predicted that the existing feedmill, and cumulative operation of the existing and new feedmill complies with the PM_{10} and $PM_{2.5}$ AGVs, with cumulative operation predicted to contribute a maximum of 74.1% of the PM_{10} AGVs at industrial receptors.

Table 2: Ambient air quality guideline values (from Ambient Air NEPM)

Parameter	24-hour AGV (µg/m^3)	Annual AGV (µg/m^3)
PM_{10}	50	25
$PM_{2.5}$	25	8

The delegated officer took into consideration the recent complaint history relating to the existing feedmill, and observations during the department's inspection of the premises in April 2021, when reviewing the applicant's air quality assessment (EAQ 2021). On reviewing the air quality assessment, the delegated officer concluded that, given there are known sources of fugitive dust associated with the existing feedmill (including but not limited to the dump sinks, handling and storage of raw materials and product in the bulk shed and yard storage cells, and straw storage and handling), and the assessment did not consider these, the modelling and assessment does not adequately characterise existing dust emissions and impact on air quality. Additionally, the assessment did not characterise or quantify the predicted impact of total suspended particulates (TSP) on air quality. Given some of the raw materials are likely to produce larger dust particles (i.e., straw and oat husk), and complaint history relating to visible dust emissions, the delegated officer considers TSP a relevant consideration with respect to air quality as may cause amenity impact.

Given the absence of fugitive dust sources in the model and evidence of dust impacts to surrounding businesses, the delegated officer does not have adequate confidence in the predicted air quality impacts associated with operation of the existing feedmill or the cumulative operation of the existing and new feedmill. However, there is reasonable confidence in the predicted air quality impacts associated with operation of the proposed new feedmill, given all delivery, handling, processing, storage and dispatch of materials will occur within an enclosed environment (no fugitive sources), with point source discharge via dust filtration units/systems as has been modelled. Given the new feedmill is predicted to contribute <42% of the PM_{10} AGVs the delegated officer has sufficient confidence that, when considered in isolation, dust emissions from the proposed new feedmill are likely to meet AGVs.

The delegated officer considers there is demonstratable evidence that dust emissions from the existing feedmill are impacting the health and amenity of nearby businesses, and establishing an additional feed mill, with an equivalent capacity to the existing facility, is likely to further exacerbate these impacts unless effective dust controls are implemented at the existing feedmill and demonstrated to be effective.

At the time of assessing the application the applicant had not provided any ambient dust monitoring data to demonstrate existing air quality impacts. However, the applicant has committed to conducting site dust monitoring and verification of actual emissions against those modelled using fixed boundary air sampling devices. The applicant has proposed to undertake verification monitoring for a period not less than 6 months and no more than 12 months following commissioning of the Oatway mill covering varying seasons.

2.5.2 Odour assessment

EAQ conducted an operational odour analysis using the methodology detailed in the department's *Guideline: Odour emissions* (DWER 2019b). Odour sources identified on the premises include the intake building, feed mixing, liquid storage, ingredient addition, cooler discharge stacks and the outload building. The enclosed buildings and dust extraction systems proposed are identified in the analysis as also acting to mitigate odour emission associated with the feed manufacturing.

Except for the cooler cyclones and filling of liquid storage tanks (medium risk), EAQ ranked all odour sources as low risk based on the controls applied. The analysis concluded that given the location of the feedmill within an industrial area, odours from the feed manufacturing inputs generally not being offensive and activities occurring within enclosed buildings with controlled discharge of emissions via dust extraction systems, it was unlikely that odour emissions from the premises would result in odour nuisance at surrounding industrial neighbours.

Given feed manufacturing activities at the new feedmill will be conducted within enclosed buildings, the nature of the feed manufacturing inputs and there being no recent history of odour complaints relating to the existing feedmill, the delegated officer does not reasonably foresee odour impacts to result from operation of the new feedmill.

2.6 Noise impact assessment

The applicant commissioned Lloyd George Acoustics to undertake an environmental noise assessment to determine whether operation of feedmill is likely to comply with the assigned noise levels prescribed in the *Environmental Protection (Noise) Regulations 1997* (Noise Regulations). The assessment was based on acoustic modelling undertaken using SoundPLAN 8.2 software to predict the worst-case noise levels received at nearby industrial and noise sensitive (residential) receptors. The modelled sound power levels were obtained from Lloyd George Acoustics' library data generated from previous noise studies, as well as supplied data from a noise survey of the existing mill (LGA 2021).

Two scenarios were modelled to address the intermittent nature of truck movements on the premises. The first scenario included fixed plant only and was assessed against the L_{A10} assigned levels. The second scenario included all fixed plant and truck movements with assessment made against the L_{A1} assigned levels.

The environmental noise assessment predicts that during worst case meteorological conditions, noise levels at all receptors (including the closest industrial and noise sensitive receptors) will comply with the relevant assigned levels. Noise levels at all receptors are predicted to be more than 5 dB below the assigned noise levels during all time periods, indicating the new feedmill will also not significantly contribute to existing industrial noise at any receptor.

The assessment outcomes are based on the internal reverberant noise level within the mill building not exceeding 80 dB(A), within the hammer mill building not exceeding 93 dB(A), and the sound power levels of external noise sources not exceeding those modelled (exhaust fans 89 dB(A), dust filters 91 dB(A), bucket elevator 90 dB(A), and conveyors 80 dB(A)).

The department reviewed the applicant's environmental noise assessment (Lloyd George Acoustics 2021) and concluded that the modelling methodology was appropriate and the assessment conclusions reasonable. It is therefore expected that noise emitted from the new feedmill will comply with the assigned levels at the nearest noise sensitive receivers, provided the installed equipment does not exceed the modelled sound power levels.

3. Consultation

The application was referred to relevant public authorities and advertised for public comment on the department's website during September and October 2021. A summary of comments is

provided below with full details provided in Appendix 1, including the department's response to the matters raised.

3.1.1 Public authorities

The City of Canning advised it has received numerous complaints, which have been referred to the department, from the surrounding businesses relating to dust emissions and raised concerns that increased manufacturing from the premises may create a greater dust nuisance.

The city has also conducted its own inspections (in response to complaints) that confirmed the dust pollution appears to be a grain/feed product and the quantity is sufficient to warrant an investigation. The city has requested that specific dust management and mitigation practices be conditioned as currently dust suppression is not sufficient at minimising impacts to surrounding businesses.

3.1.2 Public submissions

Several public submissions were received during the public comment period, in which concerns were raised about the impact of dust emissions from the existing feedmill and potential for increased emissions and associated impacts if a second mill is allowed to be constructed. Other matters raised include:

- dust emissions from the existing feedmill have been impacting on nearby business for at least the past 14 years, where emissions are worst in spring and summer due to the prevailing wind conditions;
- an analysis of the dust has been undertaken which indicates it contains wheat, barley and dust mite fragments, with fungus and mould growing on the particles;
- neighbouring businesses regularly need to keep their windows and doors closed to prevent dust entering buildings, which still enter through air conditioners and contaminate workspaces and equipment, in addition to covering workers' cars, clogs air conditioner units, fills gutters and covers solar panels; and
- workers' health is impacted by the dust emissions, which causes itchy skin/rashes, hay fever, respiratory issues, congested sinus, breathing difficulties, post nasal drip and eye allergies.

Videos and photos of dust impacting neighbouring businesses were provided with the submissions.

4. Risk assessment

The department assesses the risks of emissions from prescribed premises and identifies the potential source, pathway and impact to receptors in accordance with the *Guideline: Risk Assessments* (DWER 2020).

To establish a risk event there must be an emission, a receptor which may be exposed to that emission through an identified actual or likely pathway, and a potential adverse effect to the receptor from exposure to that emission.

4.1 Source-pathways and receptors

4.1.1 Emissions and controls

The key emissions and associated actual or likely pathway during construction and operation of the new feedmill which have been considered in this decision report are detailed in Table 4 below. Table 4 also details the control measures the applicant has proposed to assist in controlling these emissions, where necessary.

The delegated officer notes L7438/2009/9 includes conditions related to the control of emissions identified in Table 4 and that these, subject to review, will also be applicable to ongoing operation of the new feedmill, should Milne submit a licence amendment application

to include the new feedmill post construction.

The delegated officer has not reviewed or considered the adequacy of the regulatory controls on L7438/2009/9 as part of this assessment as they will be subject to review in the event a licence amendment is sought.

4.1.2 Receptors

In accordance with the *Guideline: Risk Assessment* (DWER 2020), the delegated officer has excluded the applicant's employees, visitors, and contractors from its assessment. Protection of these parties often involves different exposure risks and prevention strategies and is provided for under other state legislation.

Table 3 below provides a summary of potential human and environmental receptors that may be impacted as a result of activities upon, or emissions and discharges from the prescribed premises *(Guideline: Environmental Siting* (DER 2020)).

Table 3: Sensitive human and environmental receptors and distance from prescribed activity

Human receptors	**Distance from premises boundary**
Industrial premises	Immediately north-west and south-west of the premises
Residential dwellings (zoned urban)	550 m south-west 710 m south 820 m south-east 1,100 north-west 1,270 m north
Bentley Hospital	980 m south
Primary Schools	1,500 m south-east
Environmental receptors	**Distance from prescribed activity**
TEC/PEC	Approximately 400m east (priority 3 banksia dominated woodland of the swan coastal plain)
Perth Groundwater Area	Within the designated Perth Groundwater Area Groundwater is approximately 5m below ground level.

Table 4: Proposed applicant controls

Emission	Sources	Potential pathways	Proposed controls
Construction			
Fugitive dust Noise	Establishment of new plant	Air / windborne pathway	No specific controls proposed.
Operation			
Fugitive dust	Raw material intake, handling, and storage (unground oat husk, ground oat husk, straw, mash, grains (wheat, lupins, barley), meals (soybean meal, canola meal), finished feed pellets, oils, food additives)	Air/windborne pathway	• The premises is bitumised to minimise wheel generated dust. • Trucks delivering materials onto the premises are covered. • Dry bulk materials will be unloaded in a fully enclosed intake building fitted with a fast activating automatic roller door which remains closed other than to allow entry, exit and unloading. • The intake building door will be fitted with an alarm system to notify of failure or malfunction via a PLC system, and a manual override. • The grated in-ground intake pit will have a reverse pulse dust extraction system with a filter area of 30 m^3, fan capacity of 15,000 m^3/hr and emission specification of 25 mg/m^3 TSP, and additionally be shielded by dust curtains. • The dust extraction system will engage and operate when trucks enter and stop in the intake building. • The dust extraction system will be fitted with differential pressure sensors monitored by a PLC system with audio and visual alarms programmed in the event of reduced air flow. • Raw materials will be transferred from the inlet pit via an enclosed conveyor to enclosed silos for storage (12 x 162 m^3 silos). • When the new feedmill is operational, the majority of oat husk material (considered a high dust risk by the applicant) will be received at the new enclosed intake facility removing the need for double handling and storage of the material at the existing facility. • An onsite street sweeper has been purchased for general housekeeping and cleanup of spills.
Odour			• Raw material (excluding liquids) will be unloaded in a fully enclosed intake building fitted with a fast activating automatic roller door which remains closed other than to allow entry, exit and unloading. • Raw materials will be transferred from the inlet pit via an enclosed conveyor to enclosed silos for storage (12 x 162 m^3 silos).
Noise			• Bulk materials will be unloaded in a fully enclosed intake building fitted with a fast activating automatic roller door which remains closed other than to allow entry, exit and unloading. • External noise sources such as the dust extraction system won't exceed a sound power level of 91 dBA. • Truck speed will be limited to 20 km/hr
Liquid raw materials or stormwater contaminated with those raw materials (i.e oils, food additives)		Direct discharge to land	• Liquid delivery trucks will park in a bunded receival area to deliver products into storage tanks. Spills to the area will be cleaned up. • Spill kits will be kept on the premises to recover spills. • Liquids will be transferred into 6 x 40m^3 double skinned storage tanks. The tanks will be located in a dedicated room in the enclosed feedmill building with a concrete floor graded to a collection sump for recovery of spills/leaks. • Liquid storage tanks will be fitted with high level indicators connected to an automated pump cut-off switch or alarm to prevent overfilling. • An isolation valve will be installed on the site stormwater drainage line before it exists the premises. • The existing licence requires contaminated stormwater to be directed through a sand trap prior to discharge off the premises to the Water Corporation drainage system.
Fugitive dust Odour	Transfer of dry raw materials via conveyors and elevators	Air/windborne pathway	• All conveyors and elevators for the transfer of raw materials and product will be fully enclosed. • Conveyor speed will be slow (≤1 m/s) to minimise opportunity for dust lift off. • All conveyors (excluding two located between the pellet press and sieve) and elevators will have Skiold self-cleaning point jet dust filters with a filter area of 12 m^3, fan capacity of 1,800 m^3/hr and emission specification of 1- mg/m^3 TSP. • The dust extraction system will operate automatically when the transfer system is in operation (monitored by the PLC system) and will maintain a slight negative pressure within the process equipment. • The dust filters will return collected dust into the conveyor/elevator. • The dust filters will discharge to air 0.5 m above the feedmill roofline to increase the likelihood of dust being pulled to the ground rather than picked up and transferred offsite. • Dust filters will be fitted with differential pressure sensors monitored by a PLC system with audio and visual alarms programmed in the event of failure or malfunction. • Spare dust filter cartridges will be kept on the premises and replaced as needed. • An onsite street sweeper has been purchased for general housekeeping and cleanup of spills.
Noise			• External noise sources such as fans, conveyor drives, covered conveyors and dust filters wont exceed a sound power level of 91 dBA.

Emission	Sources	Potential pathways	Proposed controls
Fugitive dust	Processing of raw materials via the feedmill to produce pelletised feed product (mixing macro and micro ingredient addition, pelleting, pellet coating, cooling)	Air/windborne pathway	• Raw materials such as oat husk and grain will be milled with 450 kW Andritz hammer mill located inside a dedicated enclosed building. • Emissions from the hammer mill will be discharged to air via an Andritz EFF bag filter with a filter area of 43 m^3, fan capacity of 8,800 m^3/hr and emission specification of 10 mg/m^3 TSP. The dust filter exhaust will discharge 0.5 m above the mill building roof line. • Ingredients will be batched in enclosed weigh hopper batching bins then transferred via enclosed conveyor to an 8 m^3 enclosed horizontal paddle mixer unit for mixing. • All ingredient transfers occur via enclosed conveyors and elevators or hard piping. • The processing tower incorporating a pellet press, cooler, coating system, pellet sieve, control room and power distribution room will be located within a dedicated enclosed building. • Pellets will be cooled in a Geelan Counterflow ® cooler which exhausts to a cyclone dust extraction system which discharges to air via a stack 4 m above the roof line of the mill building. • The cyclone will have an emission specification of 20 mg/m^3 TSP and a fan capacity of 25,000 m^3/hr. • The cyclone stacks will have dust particle sensors/probes installed and monitored by the PLC system. The PLC will be programmed with audio and visual high (20 mg/m^3) and very high (30 mg/m^3) particle reading alarms. A high level alarm will trigger an investigation of the cause and rectification of any issues identified, and a very high alarm which persists for ≥10 minutes will trigger a plant shut-down (avoids unnecessary shutdowns if the issue can be resolved). • Cooled pellets will be directed to a pellet sieve to remove dust and fines after cooling. • Collected particles/fines from the cyclone and pellet sieve will be recycled back into the process. • Product will be coated in oil after sieving aiding to minimise fines. • The feed manufacturing process and dust extraction system will be monitored by a PLC system to ensure faults/malfunctions are responded to promptly. • An onsite street sweeper has been purchased for general housekeeping and cleanup of spills.
Noise			• Feed manufacturing/processing will occur within dedicated enclosed feedmill building. • The hammer mill will be located within a dedicated enclosed building • The internal reverberant noise level is not expected to exceed 80 dBA from fixed plant within the feedmill building, 93 dBA within the hammer mill building and the sound power level of external sources such as fans, conveyor drives, covered conveyors and dust filters is not expected to exceed 91 dBA.
Odour			• Feed manufacturing will occur within a fully enclosed building within enclosed hoppers/mixers with material transfers occurring via enclosed conveyors/elevators (dry materials) or hard piping (liquid materials). • Emissions from the coolers (key odour source) will be discharged via a cyclone and stack 4 m above the roofline of the building which will aid dispersion.
Air emissions: NOx CO	Operation of a boiler to supply steam to the feed manufacturing process.	Air/windborne pathway	• Emissions from the boilers will be discharged via a stack approximately 2 m above the roofline of the building it is housed in. • The boilers will have an economiser to increase efficiency by up to 5% (decreases overall emissions). • Expected emissions are particulates nil, carbon monoxide <20 ppm, and nitrogen oxides <150 mg/m^3.
Noise			• Boiler will be established within a dedicated enclosed building (boiler house). • The internal reverberant noise level is not expected to exceed 80 dBA from fixed plant within the feedmill building.
Boiler blowdown water		Direct discharge to ground	• Boiler will be established in a dedicated room in the enclosed feedmill building. • Boiler blowdown water will discharge into a steel blowdown vessel to cool prior to disposal to sewer under a trade waste permit.
Fugitive dust	Storage and loadout of product	Air/windborne pathway	• Product will be stored in 12x160 m^3 enclosed silos prior to loadout (no outdoor storage). • Product will be loaded into trucks in a fully enclosed loadout building fitted with fast activating automatic roller doors which remain closed other than to allow entry, exit and loading. • The loadout building doors will be fitted with an alarm system to notify of failure or malfunction via a PLC system, and a manual override. • Loadout will be conducted with an enclosed telescopic conveyor fitted with a dust suppression hopper. • The telescopic conveyor will also have a Skiold self-cleaning reverse jet dust filter with a filter area of 12 m^3, fan capacity of 1,250 m^3/hr and emission specification of 1 mg/m^3 TSP which automatically engages when loading commences. The dust filter will discharge 0.5 m above the load out building roof line. • Following loading, trucks will be covered before departing the loadout building.
Odour			
Noise			• Loading will occur within a fully enclosed loadout building fitted with fast activating automatic roller doors which remain closed other than to allow entry, exit and loading. • Truck speed will be limited to 20 km/hr.

4.1.3 Meteorology

Consideration may be given to meteorological conditions in the assessment of risk where the conditions potentially influence the likelihood of a risk event occurring.

The Bureau of Meteorology Perth Airport weather station (ID 009021) is located 8.7 km north east of the premises. Wind roses for the Perth Airport weather station are shown in Figure 3 to illustrate the wind direction versus speed for 9:00am and 3:00pm data. It is important to note that these wind roses show historical wind speed and wind direction data and should not be used to predict future data. The wind roses indicate winds are predominantly from the east and north east in the morning and from the west and south west in the afternoons.

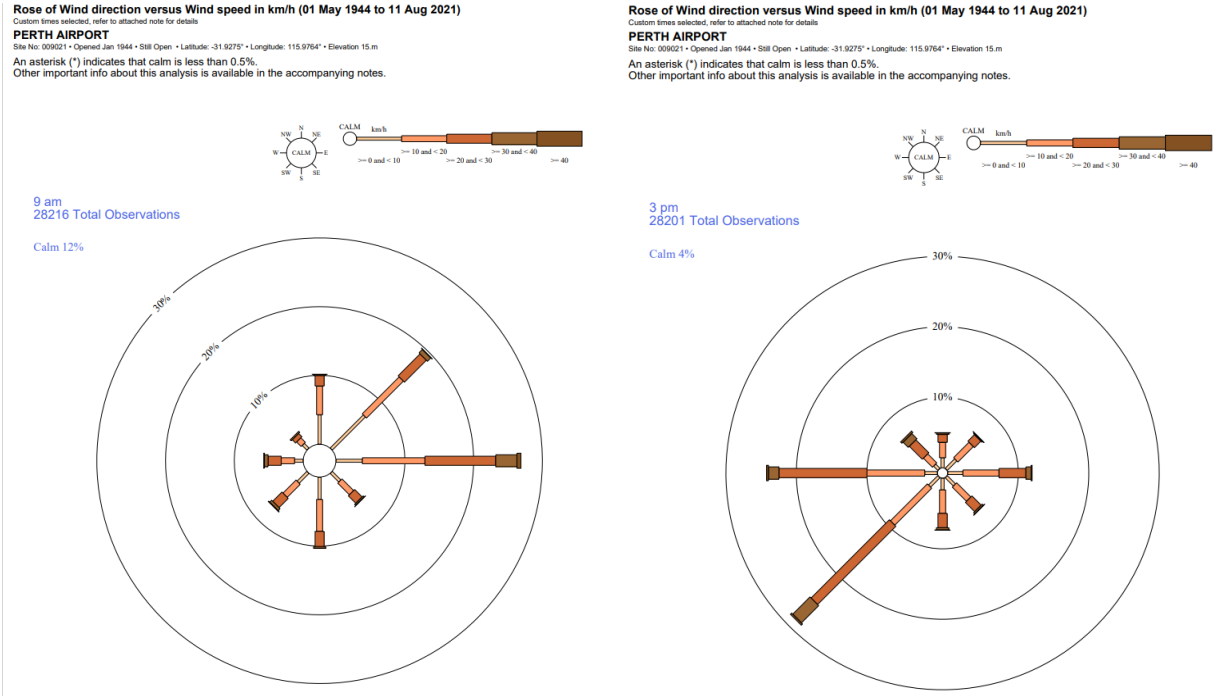

Figure 1: Wind roses for Perth Airport weather station 1994-2021

4.2 Risk ratings

Risk ratings have been assessed in accordance with the *Guideline: Risk Assessments* (DWER 2020) for each identified emission source and take into account potential source-pathway and receptor linkages as identified in section 4.1. Where linkages are in-complete they have not been considered further in the risk assessment.

Where the applicant has proposed mitigation measures/controls (as detailed in section 4.1), these have been considered when determining the final risk rating. Where the delegated officer considers the applicant's proposed controls to be critical to maintaining an acceptable level of risk, these will be incorporated into the works approval as regulatory controls.

Additional regulatory controls may be imposed where the applicant's controls are not deemed sufficient. Where this is the case the need for additional controls will be documented and justified in Table 5.

Works approval W6593/2021/1 that accompanies this decision report authorises construction and time-limited operations. The conditions in the issued works approval, as outlined in Table 5 have been determined in accordance with *Guidance Statement: Setting Conditions* (DER 2015).

Table 5: Risk assessment of potential emissions and discharges from the premises during construction and operation

Risk events				Risk rating [1] C = consequence L = likelihood	Conditions[2,3] of works approval (refer to instrument)	Reasoning
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**			
Construction/ establishment of new animal feed manufacturing facility adjacent to an existing facility.	Fugitive dust Noise	Air/windborne pathway causing impacts to amenity	Industrial premises immediately adjacent and urban residential premises from 550 m away	C = Slight, minimal impact to amenity L = Possible, could occur at some time **Low Risk**	N/A	Given the nature and scale of the construction works, with the works occurring within an existing industrial area and there being adequate separation in place to nearby residential receptors (>500 m), the delegated officer does not reasonably foresee off-site receptors being impacted by noise and dust during construction works at the premises.
Raw material intake, handling, storage and transfer	Fugitive dust			C = Moderate, specific consequence criteria (for public health) are at risk of not being met and mid-level impact to local amenity L = Possible, risk event could occur at some time **Medium Risk**	**Condition 1** **Condition 7-10** Condition 11 **Condition 12-15**	Dust emissions are associated with the handling, transfer, processing, and storage of dry raw materials. The delegated officer considered the applicant's air quality impact assessment outcomes (section 2.5.1), proposed dust controls, and the compliance and complaint history associated with operation of the applicant's existing feedmill (section 2.4) in determining the risk of fugitive dust emissions animal feed manufacturing causing amenity and/or health impacts. Given the proximity to nearby receptors, the applicant has proposed a high level of controls to minimise dust emissions from the new feedmill, which when considered in isolation, are expected to ensure dust emissions from the new feedmill will not exceed AQVs at nearby receptors, when implemented. The proposed controls include: – Operation of a street sweeper to clean up any spillage or accumulated dust. – All dry material receival, handling, transfers, storage, processing, and load out occurring within enclosed infrastructure including buildings with fast activating roller doors, processing equipment, conveyors, elevators or silos. – Installation and operation of dust filters and dust extraction systems on key dust sources including the intake building, conveyors, hammer mill, cooler and loadout. – Installation and operation a PLC system which is programmed with alarms to alert the operator to failure/malfunction of the dust controls. The delegated officer considers the above controls are critical for effectively mitigating dust emissions from the new feedmill and ensuring there is an acceptable level of risk of health and amenity impacts to nearby receptors during ongoing operations. The above controls have therefore been imposed on the works approval as infrastructure controls and operational controls. Given the dust extraction/filter systems at the feedmill are key dust controls, weekly inspections are required to ensure any defects not detected by the PLC are identified and rectified in a timely manner and these requirements have been imposed on the works approval. The delegated officer also included a requirement to visually monitoring 20 unloading and loading events to confirm dust controls at the intake and loadout buildings are effective at preventing fugitive dust emissions during these events. As the new feedmill will be located within the boundary of the existing feedmill operated by the applicant and it will continue to operate, the delegated officer has considered the risk of cumulative dust emissions impacting on the health and amenity of nearby receptors from operation of the two feedmills. Given the number and nature of complaints received by the department in the last year relating to dust impacts on businesses immediately surrounding the existing feedmill, there is demonstratable evidence that dust emissions from the feedmill have impacted on the amenity of the surrounding businesses. The delegated officer notes the applicant has implemented improved dust controls at the existing feedmill, that further improvements are being investigated and implemented, and that dust emissions from the existing facility are expected to further reduce when the new mill is operational due to reduced throughput of the existing mill and redirecting processing of oat husk feedstock through the new mill. The delegated officer notes the effectiveness of these improvements is yet to be confirmed and complaints continue to be received by the department (most recently in February 2022). The applicant has proposed to undertake boundary monitoring of dust levels up to 12 months following commissioning of the new feedmill but did not provide specific details beyond this. The delegated officer considers boundary monitoring to be an effective tool for indicating the level of impact of cumulative dust emissions from the premises (both before and after construction of the new feedmill) and has therefore specified conditions requiring boundary monitoring to be undertaken at two locations based on the direction of prevailing winds and impacted receptors, to validate the effectiveness of both the proposed controls for the new feedmill and recent improved controls at the existing feedmill. The monitoring must be undertaken for at least 6 months including before and after the commencement of time limited operations, to ensure data can be compared between existing air quality and any changes when the two feedmills are operating. Monitoring must include PM_{10} and TSP levels, in accordance with Australian Standards for data integrity, to allow for both health and amenity air quality impacts to be measured. Given the cyclone is the primary dust control for the manufacturing process, the delegated officer considered the need for a requirement to install monitoring ports and conduct periodic monitoring of emissions from the stack in accordance with relevant standards to verify cyclone performance. The applicant considered implementation of a continuous, real-time dust particle detection system in the cyclone stacks, to be a more appropriate regulatory control than periodic monitoring. While a real-time system cannot provide an Australian Standard measure of emission concentration, it provides real-time detection of dust concentration in the cyclone stacks through all operating conditions allowing operators take action to investigate or shut-down in a timely manner when dust concentration increases beyond set points (indicative of a malfunction or blockage). In comparison, periodic stack testing only provides a single measurement of performance under a single set of operating conditions with results not immediately available and therefore is not suitable for use as a management tool. Based on this the delegated officer included regulatory controls to install, operate and calibrate a dust particle detection system in the cyclone stacks. The effectiveness of the system will be reviewed when a licence or amendment application is submitted for the feedmill. Based on experience of the existing feedmill, and the increased storage capacity of the new feedmill, the storage of bulk raw material

Risk events				Risk rating [1] C = consequence L = likelihood	Conditions[2,3] of works approval (refer to instrument)	Reasoning
Sources / activities	**Potential emission**	**Potential pathways and impact**	**Receptors**			
						and product must also be in enclosed silos to minimise fugitive dust emissions and regulatory controls were included to require this.
	Odour			C = Slight, minimal impact to amenity L = Unlikely, will probably not occur in most circumstances **Low Risk**	Nil.	The Operational Odour Assessment (EAQ 2021) considers the majority of identified odour sources as being low risk, excluding the cyclone and liquid delivery, where the nature of the raw feed material is largely plant based and not considered offensive. Only a single, historical complaint (>10 years ago) has been recorded by the department regarding odour from the premises. Given this, there being adequate separation in place to nearby residential receptors (>500 m) and the design of the feedmill being fully enclosed with all intake, manufacturing and load out occurring within enclosed buildings (to be included as infrastructure controls for fugitive dust); the delegated officer does not reasonably foresee off-site receptors being impacted by odour from operation of the new feedmill.
	Noise			C = Slight, minimal impact to amenity L = Possible, could occur at some time **Low Risk**	Condition 1 Condition 7	Noise modelling (LGA 2021) indicates full compliance with the Noise Regulations when considering full operation of the new feedmill under worst case meteorological conditions. The delegated officer notes this assessment is based on specified equipment having maximum sound power levels (91 dBA for external sources) or reverberant noise level within buildings (80 dBA within the feedmill building and 93 dBA within the hammer mill building), therefore these infrastructure controls will be imposed on the works approval. The delegated officer does not reasonably foresee off-site receptors being impacted by noise from operations of the new feedmill with the above controls in place.
	Liquid raw materials and chemicals (oils, molasse, sodium hydroxide)	Direct discharge to land causing contamination	Soils and groundwater 5 m below the ground surface	C = Slight, minimal on site impact L = Unlikely, will probably not occur in most circumstances **Low Risk**	Condition 1 Condition 7	The applicant proposes that all liquid raw materials and chemicals storage and handling will occur within the feedmill building, in double skinned tanks within an area graded to a sump for spill recovery, with tank level indicators and pump cut out or alarm to prevent overfilling. Delivery will be via a bunded receival area to allow for containment and cleanup of spills. The general feedmill process does not generate wastewater (other than boiler blowdown which is discharged to a Water Corporation sewer) and all activity except for delivery of liquids (transferred directly from tankers to storage tanks) occurs within enclosed buildings. Licence L7438/2000/9 already contains conditions regarding treatment of contaminated water prior to discharge from the premises to the Water Corporation drainage network which services the Welshpool Industrial area. The delegated officer does not reasonably foresee off-site receptors being impacted by contaminated water or raw material spills with the above controls in place.
Operation of boiler	Point source air emissions (NOx, CO)	Air/windborne pathway causing impacts to health	Industrial premises immediately adjacent and urban residential premises from 550 m away	C = Minor, Specific Consequence Criteria (for public health) are likely to be met L = Unlikely, the risk event will probably not occur in most circumstances **Medium Risk**	Condition 1 Condition 7	The applicant provided expected NOx and CO emissions for the boiler which will be discharged via a stack approximately 2 m above the roofline of the building it is located in. In accordance with the department's draft *Guideline: Air emissions* (2019), a screening analysis of the emissions indicates that boiler CO emissions are insignificant and NOx emissions are not insignificant at up to 90% of the short term AGVs (based on NEPM). It is noted the screening calculation is a conservative indication of ground level concentrations within the immediate bounds of the activity, and that it was based on emissions at actual, rather than standard conditions, therefore ground level concentration of NOx at receptors is anticipated to be lower than the screening tool outcome. Given the size of the boilers, predicted emission rates and screening tool outcomes, it is unlikely emissions from the boilers will exceed the NEPM criteria at nearby receptors. The delegated officer noted that the applicant did not propose any emission controls for the boilers but that a natural gas fired boiler with an economiser has been proposed by the applicant. These have been specified as requirements in the works approval as the economiser will improve efficiency resulting in an overall emission reduction, and emissions are based on natural gas as a fuel source.
	Noise	Air/windborne pathway causing impacts to amenity	Industrial premises immediately adjacent and urban residential premises from 550 m away	C = Slight, minimal impact to amenity L = Possible, could occur at some time **Low Risk**	Condition 1 Condition 7	The boiler will be located within an enclosed building (boiler house), which, as per the assessment for feedmill noise, the delegated officer considers must meet a reverberant noise level of 80 dBA within the building to ensure that noise levels received at surrounding industrial and residential receptors resulting from operation of the new feedmill are likely to comply with the Noise Regulations.

Note 1: Consequence ratings, likelihood ratings and risk descriptions are detailed in the *Guideline: Risk Assessments* (DWER 2020).

Note 2: Proposed applicant controls are depicted by standard text. **Bold and underline text** depicts additional regulatory controls imposed by department.

Note 3: Conditions **2, 3, 4, 5, 6, 16, 17, 18** and **19** are all department imposed conditions required for compliance reporting, authorising time limited operation, and general complaint and record keeping requirements

5. Decision

The delegated officer has determined the proposal to construct and operate a new animal feed manufacturing facility at Lot 501 John Street, Welshpool, with an assessed operational throughput of 150,000 tpa, does not pose an unacceptable risk of impacts to off-site receptors. This determination is based on the following:

- all dry raw material receival, handling, transfers, storage, processing, and load out of product will occur within enclosed infrastructure, including buildings with fast activating roller doors, processing equipment, conveyors, elevators or silos;
- dust filters and dust extraction systems being installed and operated on key dust sources, including the intake building, conveyors, hammer mill, cooler and loadout;
- installation and operation a PLC system which will be programmed with alarms to alert the operator to failures or malfunctions of the key dust controls such as dust extraction and roller doors,
- dust modelling indicating ground level concentrations of PM_{10} will be below relevant AGLs at all surrounding receptors when the new feedmill is considered in isolation; and
- noise modelling indicating noise emissions from the premises will comply with the Noise Regulations during daytime periods.

Conditions have been imposed on the works approval based on the controls described above as they are considered critical to maintaining an acceptable level of risk.

Cumulative impacts

The delegated officer has concluded the new feedmill, when considered in isolation, does not pose an unacceptable risk of impacts to receptors. However, the delegated officer notes the new feedmill is proposed to be operated in conjunction with the existing feedmill, which, when considering the compliance and complaints history of the existing feedmill (section 2.4), there is demonstratable evidence that dust emissions from the existing feedmill are impacting on the health and amenity of employees at nearby industrial businesses.

The delegated officer notes the applicant has undertaken significant improvements to mitigate dust emissions from the existing feedmill operations and has committed to continuing to investigate and implement further improvements.

In terms of cumulative impacts, the applicant expects that operation of the new feedmill will significantly reduce cumulative dust emissions from the premises, as the new feedmill will be used preferentially, thereby reducing throughput at the existing feedmill. The new feedmill will also include increased enclosed storage capacity of high-risk raw materials, such as oat husk, that will also primarily be delivered and processed at the new feedmill, reducing a significant source of fugitive dust emissions from the existing feedmill operations.

Validation of improvements

The delegated officer considers there is merit in allowing an increase in production at the premises if it results in improved environmental performance to acceptable levels from existing operations and reduces the overall risk profile of the premises. The effectiveness of the proposed controls and validation of expected improvements will therefore need to be demonstrated, prior to ongoing full operation of the new feedmill.

To demonstrate the effectiveness of the proposed controls and to validate the expected improvements to air quality, several conditions have been imposed on the works approval requiring implementation of an ambient air monitoring program during construction and time limited operations. The program will be used to measure the impact of dust on air quality, and any change which occurs once the new feedmill is operational.

Monitoring locations have been nominated based on prevailing winds and receptors most likely to be impacted by dust. The data collected through the monitoring program will be used to assess whether dust from existing activities on the premises is sufficiently mitigated to

prevent unacceptable impact on air quality. The delegated officer notes the proximity of the premises to other dust emitting activities such as traffic on highways, ongoing roadworks and industrial premises, which may contribute to monitored dust levels. While speciation of collected dust samples has not been specified as a requirement of the works approval the applicant should consider undertaking such analysis for any significant samples (such as those which exceed AGVs) to assess their contribution.

5.1 Works approval and licence

Works approval W6593/2021/1 that accompanies this report authorises construction, commissioning and time-limited operations only. The conditions in the issued works approval, as outlined in Table 5 have been determined in accordance with the *Guidance Statement: Setting Conditions (DER 2015)*.

A licence amendment or new licence is required to authorise ongoing emissions associated with the operation of the new feedmill. A risk assessment for the operational phase has been included in this report, however licence conditions will not be finalised until the department assesses the licence application. Any application submitted for a licence or licence amendment must clearly demonstrate that operation of the two feedmills will not pose an unacceptable risk of impacts on ambient air quality and associated health and amenity impact to receptors.

Whilst the works approval requires submission of ambient air monitoring results in a time limited operations report following completion of time limited operation, it is anticipated the applicant will provide available monitoring results with any licence amendment or new licence application in order to provide data to demonstrate whether ambient air quality impacts are acceptable.

5.2 Applicant comments on draft

The applicant was provided with the drafts of the works approval and this report on 19 April 2022. Comments received from the applicant on 26 May and 23 June 2022 are summarised in Appendix 2.

The delegated officer has considered the requested changes to be reasonable and has made the necessary changes to conditions, as per Appendix 2.

6. Conclusion

Based on the assessment in this decision report, the delegated officer has determined that a works approval will be granted, subject to conditions commensurate with the determined controls and necessary for administration and reporting requirements.

Chris Malley
MANAGER, PROCESS INDUSTRIES
REGULATORY SERVICES

Delegated officer
under section 20 of the Environmental Protection Act 1986

7. References

1. Department of Environment Regulation (DER) 2015, *Guidance Statement: Setting conditions*, Perth, Western Australia.
2. Department of Water and Environmental Regulation (DWER) 2019a, *Draft Guideline: Air emissions*, Perth, Western Australia.
3. DWER 2019b, *Guideline: Odour emissions*, Perth, Western Australia.
4. DWER 2020a, *Guideline: Environmental siting*, Perth, Western Australia.
5. DWER 2020b, *Guideline: Risk assessments*, Perth, Western Australia.
6. Milne AgriGroup Pty Ltd (Milne) 2021, *Application for a Works Approval under the Environmental Protection Act 1986 (including application form and attachments)*, Welshpool, Western Australia.
7. Milne AgriGroup Pty Ltd (Milne) 2022, *Milne Feeds New Mill Overview and Dust Management Improvements (including attachments)*, Perth, Western Australia.
8. Environmental & Air Quality Consulting Pty Ltd (EAQ) 2021, *Emissions Impact Assessment of Proposed Oatway Feedmill, Milne Feeds: Lot 501, 89 John Street Welshpool*, *Prepared for RPS Australia West Pty Ltd*, Joondalup, Western Australia.
9. Lloyd George Acoustics 2021, *Environmental Noise Assessment Proposed Feedmill 103-105 Welshpool Road, Welshpool Reference: 21056393-01, Prepared for Milne AgriGroup Pty Ltd*, Hillarys, Western Australia.
10. Xodus 2021, *Milne Feeds Welshpool Dust Management Plan*, Perth, Western Australia.
11. National Environmental Protection Council 2021, *National Environment Protection (Ambient Air Quality) Measure*, Canberra, Australian Capital Territory.

Appendix 1: Summary of submissions and consultation

Table 6: Stakeholder consultation summary

Consultation method	Comments received	Department response
Application advertised on the department's website on 29 September 2021 for a period of 21 days, and in the West Australian Newspaper on 4 October 2021.	The department received three public submissions from surrounding business owners during the public comment period in response to the advertisement of the application. The concerns raised primarily related to the impact of dust emissions from the existing feedmill and potential for increased emissions and associated impacts if a second feedmill is constructed. These align with comments received from businesses directly contacted about the application therefore further details have been included in the following row and addressed together with the stakeholder comments. One submitter considered the department failed to adequately consult surrounding businesses in relation to the application.	The department's public consultation process for applications received under Part V of the EP Act is detailed in section 13.2 of the *Guideline: Industry Regulation Guide to Licensing (2019)*. In line with this the department advertised the application in accordance with the details in column one. The department referred to its stakeholder and complaint records for the existing feedmill to determine relevant direct interest public stakeholders for the premises and contacted each of those which contact details had been provided for. The department has recorded all persons who submitted public comment on the application as stakeholders for the premises and will notify them of the instrument's grant via correspondence.
Three adjacent business advised of the application 5 October 2021 and invited to provide comment.	Two businesses responded within the comment period. The submissions primarily related to ongoing dust emissions from the existing Milne feedmill and the impact of the dust on the operation of surrounding businesses, and the health and amenity of workers. A summary of comments is provided. • Dust emissions from the existing feedmill have been occurring and impacting on businesses for the duration of the tenants occupancy of neighbouring lots (14 years and seven years). It is worse in spring and summer and when prevailing winds are from the direction of the feedmill. • A laboratory analysis of the dust impacting the businesses has been undertaken with the results indicating it contains wheat, barley and dust mite fragments and fungus and mould were found to grow on the dust. • Neighbouring businesses need to keep window and doors closed to prevent dust entering buildings but it still enters the buildings through air conditioners contaminating workspaces and impacting on equipment and products requiring regular additional cleaning. The dust also covers workers cars, clogs air-conditioning units, fills gutters and covers solar panels (requiring additional cleaning). The dust has caused plants to germinate in gutters. • Workers health is impacted by the dust emissions with impacts such as itchy skin/rashes, hay fever, respiratory issues, congested sinus, breathing difficulty, post nasal drip, and eye allergies. • Continual complaints have been made to Milne about the dust but the problem is denied. Despite this, Milne has brought covers for cars and sent cleaners to clean workshops, cars and carparks of neighbouring businesses. • Eight surrounding businesses have been impacted by dust from the existing feedmill. • Effective doubling of the feed manufacturing capacity with the addition of a second feedmill will increase dust emissions and exacerbate the associated impacts occurring to surrounding businesses. • Increased production will increase heavy vehicle movements (potentially doubling them) which will compound traffic problems in the area, particularly at the John Street/Welshpool Road intersection which is blocked when large trucks turn onto John Street from the premises. • The location of the premises in the Perth Metro area is not appropriate and the premises should move. • The submissions object to the application (and seek closure of the existing feedmill) as the applicant is in breach of licence conditions relating to the control of dust emissions for the existing feedmill, therefore there is lack of confidence in their ability to comply	The delegated officer acknowledged the concerns regarding dust emissions raised by stakeholders and public submissions and reviewed the compliance and complaints history relating to the existing Milne feedmill (section 2.4) and took this into consideration when assessing the risk of health an amenity impacts associated with dust emissions. As documented in Table 5, the new feedmill will have appropriate dust controls (these have been applied as conditions of the works approval), and additional dust controls have recently been implemented at the existing feedmill (refer to section 2.4), however the effectiveness of the controls in mitigating dust emissions has not yet been measured or proven. As a result of this assessment ambient boundary dust monitoring requirements have been imposed on the works approval to enable sufficient data to be collected for the impact of dust emissions on air quality to be measured and taken into consideration when considering longer term licensing of the feedmills. The department also has an ongoing investigation into dust emissions from the existing feedmill which is separate to the application assessment and decision making as it relates to separate licence L7438/2000/9 which applies to the feedmill. The investigation has led to several improvements being undertaken to mitigate dust, with further improvements planned. At the time of the assessment the investigation remains open. Regarding comments relating to traffic and its related impacts which occur outside the premises boundary, these matters are not within the scope of Part V of the EP Act and are best addressed to the City of Canning. Comments relating to the location of the feedmill in the Perth Metro area are land use planning matters beyond the scope of assessments and instruments issued under Part V of the EP Act. These matters are considered through local government development approval processes under the *Planning and Development Act 2005*. A Development Approval was granted for the feedmill by the City of Canning on 24 May 2021. It is noted the feedmill premises is zoned General Industry under the Town Planning Scheme and is within the Welshpool industrial precinct.

Consultation method	Comments received	Department response
	with future regulatory controls if the application is granted. Consider the existing dust issues should be rectified before a works approval is granted as it will result in a doubling of capacity and potentially exacerbate the existing dust impacts experienced by the surrounding businesses. • Videos and photos of dust were provided with the submissions	
Local Government Authority advised of proposal on 4 October 2021Bob Park	The City of Canning replied on 22 October 2022 and advised that the City receives numerous complaints (which have been referred to the Department) from the surrounding businesses relating to dust emissions and the City's Environmental Health Officers had observed dust deposited on surrounding premises to contain materials and substances like those used in Milne's manufacturing process. The City expressed concern that increased manufacturing from the premises will create a greater dust nuisance and the City expects a thorough dust management plan to be conditioned in the works approval to prevent emission of dust and materials onto neighbouring properties. The City considers the current dust management plan is not sufficient in mitigating the nuisance of dust onto neighbouring properties. The City also raised concern that increased production may lead to an increase in roosting and bird excrement, increasing nutrient loading on the City's stormwater system. The City would like to see a strategy to mitigate bird roosting to prevent this. The City of Canning also submitted a letter to the Department on 30 November 2021 detailing past complaints received from neighbouring businesses and concerns regarding dust pollution from the existing feedmill and lack of dust control at the facility. The City's inspections have confirmed the dust pollution appears to be a grain/feed product and the quantity is sufficient to warrant an investigation. The City requested that specific dust management and mitigation practices be conditioned as currently dust suppression is not sufficient at minimising impacts to surrounding businesses. They also requested the department investigate the issue from the existing facility.	The concerns regarding dust emissions from the existing feedmill are noted. The delegated officer noted the City's concerns regarding bird excrement but considers this matter to be beyond the scope of assessments and instruments issued under Part V of the EP Act, as it does not relate to a direct emission from the premises. It should be noted that the enclosed nature of the receival, transfer, handling, processing, storage and loading infrastructure (which are required by the works approval conditions) is likely to limit access to feed, and associated roosting, at the new feedmill.

Appendix 2: Summary of applicant's comments on risk assessment and draft conditions

Table 7: Applicant consultation summary

Condition	Summary of applicant's comment	Department's response
Cover page	Requested the assessed production capacity for fuel burning be increased from 2,400 kg/hr to 4,800 kg/hr for consistency with the submitted application.	Production capacity was based on implementation of the first stage of the project (1 x boiler). Based on applicant's advice they wish for both stages of the project to be included as per the initial application the delegated officer amended production capacity for fuel burning to 4,800 kg/hr based on two boilers being operated.
Condition 1 Table 1 Row 1 – Intake building Condition 7 Table 2 Row 1 – Intake building	The applicant requested the requirement for the building to have fast acting roller doors at entry and exit be amended to a single fast acting door at the entry only, and that the requirement for the door to remain closed other than during entry and exit be amended such that is allows for the door to remain open when unloading is occurring as the building is not designed as a drive through building. The applicant proposes that the intake building will only have a single door and trucks will reverse into the building until the tailgate is positioned over the below ground intake pit/hopper. The truck will be enclosed by dust curtains that will act to contain the dust generated during unloading. Dust within the curtained area will be captured by the dust extraction unit which will operate while the unloading occurs. The applicant proposes that the position of the truck will limit air flow and controls will capture the dust therefore the risk of fugitive dust from the building is sufficiently minimised. The applicant also advised that the truck fumes in the building are a health and safety concern if the door were to remain closed during unloading.	The information submitted by the applicant did not clearly articulate there would be a requirement for the fast-acting roller door to the intake building to remain open when unloading was occurring. The delegated officer reviewed the reasoning provided by the applicant and agreed the proposed change is unlikely to increase the assessed risk profile for fugitive dust from the intake building impacting receptors and therefore agreed to change the requirement to allow the door to remain open, during entry, exit and unloading, with the requirement for the door to remain closed at all other times. To provide assurance the intake building controls are effective at preventing fugitive dust emissions through the open doorway during unloading, the applicant is required to visually monitor at least 20 unloading events during time limited operations and include the results in the time limited operations report.
Condition 1 Table 1 Row 2 – Raw material storage silos	Request the number of silos be increased from six to 12 for consistency with the submitted application.	The number of silos was based on implementation of only the first stage of the project therefore has been increased to 12 (staged) based on applicant's advice that they wish for both stages of the project to be included as per the initial application. The works approval was amended to allow for construction and time limited operation of the infrastructure to occur in two stages.
Condition 1 Table 1 Row 3 – Conveyors and elevators	Request the fan capacity is amended to 1250 m^3/hr under normal operation with a maximum flow rate of not more than 1800 m^3/hr. Request the filter area is amended from 3 m^2 to 12 m^2 as there will be four filter bags, each 3 m^2.	The proposed changes will not alter the assessed risk profile associated with dust emissions from the conveyors and elevators therefore the fan capacity was amended to not less than 1,250 m^3/hr (it is not necessary to specify a normal operating capacity in construction requirements) which aligns with the fan capacity which was including in dust modelling for the infrastructure. The filter area was also increased to 12 m^2 to account for the number of filter bags in the dust filters.
Condition 1 Table 1 Row 4 – Hammer mill building	Request the hammer mill is referred to as 'an enclosed hammer mill' as described in the submitted application or 'an enclosed hammer mill with a power input of 450 kW ' rather than 'an enclosed hammer mill with a design capacity of not more than 14 t/hr' as the capacity of the mill is dependent on the type of product being milled and is therefore variable. Request the requirement for the hammer mill to be designed to achieve an internal reverberant noise level within the hammer mill building not exceeding 93 dB(A) be removed as the internal reverberant power level is a matter to be addressed by Worksafe WA and does not directly translate to an environmental impact. Request the fan capacity is amended from "have a fan capacity of at least 7,900 m^3/hr to have a fan capacity of at least 8,800 m^3/hr" not due to the supplier changing the filter specification.	The hammer mill design capacity of 14 t/hr was based on information in the application and is one of the factors used to verify design capacity of the feedmill as it limits production. Noting that the capacity of the mill is dependent on the product milled, and that the works approval will specify assessed production capacity of 150,000 tpa, the description was changed accordingly as the change will not alter the assessed risk profile of the hammer milling activity. As per Table 5, noise levels have been specified as regulatory controls to ensure noise emissions remain a low risk of impacting receptors given that the noise impact assessment was based on the levels specified in the works approval. The delegated officer explained the basis for the requirement to the applicant and it was agreed to retain the requirement. The fan capacity was amended as the change is not expected to significantly change particulate emission levels and a particulate emission level for the hammer mill is specified as a construction requirement.
Condition 1 Table 1 Row 5 – Bulk liquid storage	Request the number of bulk liquid storage tanks is increased from three to six consistent with the submitted application. Request the requirement for liquid storage tanks to be 'fitted with high level indicators connected to an automatic pump cut-off switch' be amended to be 'fitted with high level indicators connected to either visual or audible alarm or an automatic pump cut-off switch'. Milne consider that a visual or auditory alarm represents a sufficient safeguard. This change has been requested as some of the tankers have hydraulic pumps on the truck which cannot be controlled by the PLC.	The number of silos was based on implementation of only the first stage of the project therefore has been increased to six (staged) based on applicant's advice that they wish for both stages of the project to be included as per the initial application. The delegated officer considers the proposed change to the liquid storage tank alarm requirements will not increase the risk of hazardous materials discharge to the environment therefore agreed to change the requirement to include the option of an alarm triggered by high level indicators.

Condition	Summary of applicant's comment	Department's response
Condition 1 Table 1 Row 6 – 1500 kW natural gas fired steam boiler	Request the number of natural steam boilers is increased from one to two and that the boilers be installed in a boiler house rather than the feedmill building as they will be in a separate adjacent building. Milne consider the requirement for the boiler to have a carbon steel blowdown vessel which directs blowdown to the trade waste to be unnecessary as it is an engineering and safety requirement. If DWER considers it should be retained, Milne request that it is altered to read: 'must have a blowdown vessel which discharges to sewer' as it is not considered necessary to specify the material type.	Based on applicant's advice they wish for both stages of the project to be included as per the initial application the delegated officer increased the number of boilers to two (staged). The requirement for a blowdown vessel has been included to ensure there is means for potentially contaminated blowdown water to be appropriately contained and disposed to prevent it being discharged to the environment. The requirement aligned with descriptions of the infrastructure provided in the application and the RFI Response document. The Delegated Officer agreed it was not necessary to specify the construction material for the vessel only that one must be installed so amended the requirement in accordance with the requested changes.
Condition 1 Table 1 Row 7 – Feedmill building	Advised the number of weigh hopper bins to be installed was eight and that the number of pellet presses, coolers, pellet sieves and coating systems be increased from one of each to two of each. Request the pellet press capacity be increased from 14 t/hr to 35 t/hr for each pellet press. Request the requirement for the feedmill equipment to be designed to achieve an internal reverberant noise level within the Feedmill building not exceeding 80 dB(A) be removed as the internal reverberant power level is a matter to be addressed by Worksafe WA. Milne requests that the specification is altered to read "Exhaust gases from the cooler must be directed to a cyclone dust separation system". This is a more accurate description of the cyclone.	Based on applicant's advice that they wish for both stages of the project to be included as per the initial application the delegated officer increased the number of infrastructure items as requested and provided for staged construction and time limited operation in the works approval. The pellet press design capacity of 14 t/hr was based on information in the application. An increase to infrastructure capacity has the potential to increase production from the assessed rate. The works approval will specify assessed production capacity of 150,000 tpa in line with the application. As per Table 5, noise levels have been specified as regulatory controls to ensure noise emissions remain a low risk of impacting receptors given that the noise impact assessment was based on the levels specified in the works approval. The delegated officer explained the basis for the requirement to the applicant and it was agreed to retain the requirement. The description of the cyclone was changed from an extraction system to a separation system throughout the works approval as it does not change the intent of the controls.
Condition 1 Table 1 Row 8 - Cooler cyclone dust extraction system Condition 7 Table 2 Row 7 - Cooler cyclone dust extraction system Condition 11 Table 4	Request that the requirement for the system to be capable of reducing particulate emission to less than 20 mg/m^3"be increased to 30 mg/m^3 as cyclones are not capable of meeting a sustained emission limit of 20 mg/m^3 on a consistent basis given the variation in particulate size and density. Request removal of the requirement for differential pressure transmitters be removed as dust cyclones do not contain bag filters to measure the differential pressure across. Confirmed the fan capacity of the system would be a maximum of 25,000 m^3/hr. Request the requirement to install a sampling port compliant with AS 4323.1 and undertake stack emission monitoring in accordance with USEPA standards be removed on the basis of cost, the need to re-engineer stacks as a result, and it providing an inferior environmental outcome to the method proposed by Milne. Milne propose the use of particle sensors in the exhaust stacks for continuous measurement of dust rather than spot checks via stack testing. Milne acknowledge that the monitors do not provide the same level of accuracy as stack testing but consider continuous measurement is a more useful management tool which can be used to identify and take action to address upward trending emissions. The monitoring would be linked to a PLC alarm so high levels can be investigated or an automatic plant shutdown when high dust levels persist for extended periods. It is desirable to avoid unnecessary plant shut-down and start-up as these can result in short periods of increased discharge rates. For the time limited operations period Milne propose the cyclone particle sensors are monitored by a PLC programmed for the following management responses: • Where readings exceed 20 mg/m^3, an alarm shall be raised to trigger a control response; • Where reading exceed 30 mg/m^3 for more than 10 minutes, the dust extraction should automatically shut down. Milne provided a copy of the internal calibration procedure which would be used to calibrate the particle sensors on a three-monthly basis.	The description of the cyclone was changed from an extraction system to a separation system as it does not change the intent of the controls. No change was made to the dust reduction capability of the cooler cyclone as it is based on the modelled emission rate of 20 mg/m^3. The condition requires that the installed cyclone is capable of reducing particulates to this level but it is recognised that excursions may occur due to malfunctions, and no limit has been set. Rather this informs the levels at which management controls are implemented. The requirement for pressure transmitters was removed recognising they are not applicable to cyclones. The delegated officer considered the request to remove the requirement for monitoring port installation and periodic stack testing and use the continuous real-time dust particle detection system in the cyclone stacks for monitoring and management of cyclone performance. The delegated officer determined the continuous real-time dust particle detection system would provide an effective means of confirming cyclone performance is maintained and allow for the applicant to react to increased dust levels indicative of a malfunction in a timely manner, although it would not provide the verifiable level of accuracy that Australian Standard stack monitoring would. The delegated officer considered due to the monitoring and reporting requirements in the works approval, the performance of the continuous real-time dust particle detection system can be reviewed and considered when a licence or amendment application is submitted and if uncertainty exists a requirement to install monitoring ports and undertake stack testing could be applied in the licence if the system is deemed to not be sufficiently effective. The requirements to install Australian Standard monitoring ports and undertake stack testing were removed as the delegated officer does not consider this change will increase the assess risk. Requirements to install, operate and calibrate the dust particle detection system in the cyclone stacks were included in the works approval.
Condition 1 Table 1 Row 9 – Bulk loading building	Request the requirement for the fast acting roller doors to remain closed other than during entry and exit be amended such that is allows for one door to remain open at any time. The applicant considers that having one door closed will prevent throughflow which may result in accumulated dust being carried outside the building, and other dust controls within	The information submitted by the applicant did not clearly articulate that there would be a requirement for the fast-acting roller door entry to the bulk loading building to remain open when loading occurs. The delegated officer reviewed the reasoning provided by the applicant and agreed that the proposed change is unlikely to increase the assessed risk of fugitive dust from

Condition	Summary of applicant's comment	Department's response
Condition 7 Table 2 Row 8 – Bulk loading building	the building (covered loads, point source dust controls and telescopic loading) minimise the likelihood of spillages and airborne dust being emitted through the open door. Milne therefore consider there is a low risk of dust emissions occurring if one door is allowed to remain open. Milne stated that when the facility is not operational both doors would remain closed to maintain site security. For the bulk load out build Milne request the fan capacity is amended to not less than 1250 m^3/hr rather than 1800 m^3/hr, and that the filter area is amended from 3 m^2 to 12 m^2 as there will be four filter bags, each 3 m^2.	the bulk loading building impacting receptors from medium therefore agreed to change the requirement to allow the entry door to remain open, during entry, exit and unloading, with the requirement for the door to remain closed at all other times. To confirm that the bulk loading building controls are effective at preventing fugitive dust emissions through the open doorway during loading, the delegated officer included an additional requirement for the applicant to visually monitor a minimum of 20 loading events during time limited operations and include the results in the time limited operations report. Similarly, the proposed changes to fan capacity and filter area will not alter the assessed risk profile therefore the fan capacity was amended to not less than 1250 m^3/hr which aligns with the fan capacity which was including in dust modelling for the infrastructure. The filter area was also increased to 12 m^2 to account for the number of filter bags in the dust filter.
Figures 2 and 3	Requested the premises maps be updated with figures which did not illustrate equipment layout due to commercial sensitivity of the information.	The instrument was amended to include suitable updated figures provided by the applicant.